TEMPORARY HOUSING MISSION TYPES

HURRICANES

TORNADOS

EARTHQUAKES

FLOODS

HURRICANES

Saffir-Simpson Hurricane Scale

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall.

- *Category One Hurricane:*

Winds 74-95 mph - No real damage to building structures. ***Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs.***

- *Category Two Hurricane:*

Winds 96-110 mph - Some roofing material, door, and window damage of buildings. ***Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers.***

- *Category Three Hurricane:*

Winds 111-130 mph - Some structural damage to small residences and utility buildings with a minor amount of curtain wall failures. ***Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes destroyed.***

- *Category Four Hurricane:*

Winds 131-155 mph - More extensive curtain wall failures with some complete roof structure failures on small residences. ***Complete destruction of mobile homes. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles.***

- *Category Five Hurricane:*

Winds greater than 155 mph - Complete roof failure on many residences and industrial buildings. ***Complete destruction of mobile homes. Major damage to lower floors of all structures located close to the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline.***

The Fujita Scale of Tornado Damage

F-0: (Light Damage) Chimneys are damaged, tree branches are broken, shallow-rooted trees are toppled.

F-1: (Moderate Damage) Roof surfaces are peeled off, windows are broken, some tree trunks are snapped, unanchored manufactured homes are over-turned, attached garages may be destroyed.

F-2: (Considerable Damage) Roof structures are damaged, manufactured homes are destroyed, debris becomes airborne (missiles are generated), large trees are snapped or uprooted.

F-3: (Severe Damage) Roofs and some walls are torn from structures, some small buildings are destroyed, non-reinforced masonry buildings are destroyed, most trees in forest are uprooted.

F-4: (Devastating Damage) Well-constructed houses are destroyed, some structures are lifted from foundations and blown some distance, cars are blown some distance, large debris becomes airborne.

F-5: (Incredible Damage) Strong frame houses are lifted from foundations, reinforced concrete structures are damaged, automobile-sized debris becomes airborne, trees are completely debarked

In the United States, tornadoes occur in all 50 states. However, the region with the most tornadoes is "Tornado Alley," a swath of the Midwest extending from the Texas Gulf Coastal Plain northward through eastern South Dakota. Another area of high concentration is "Dixie Alley," which extends across the Gulf Coastal Plain from south Texas eastward to Florida. tornadoes.

Richter Earthquake Magnitudes

Less than 3.5 - Generally not felt

3.5-5.4 - Often felt, rarely causes damage.

Under 6.0 - slight damage to well-designed buildings. Major damage to poorly constructed buildings over small regions.

6.1-6.9 - Can be destructive in areas up to about 100 kilometers across where people live.

7.0-7.9 - Major earthquake. Can cause serious damage over larger areas.

8.0 or greater - Great earthquake. Can cause serious damage in areas several hundred kilometers across.

FLOODS

Flooding happens during heavy rains, when rivers overflow, when ocean waves come onshore, when snow melts too fast or when dams or levees break. Flooding may be only a few inches of water or it may cover a house to the rooftop. Floods that happen very quickly are called flashfloods. Flooding is the most common of all natural hazards. It can happen in every U.S. state and territory.

MANAGEMENT CELL DEPLOYMENT

- SME and AO Deploy to JFO
- Brief TL, ATL and FCO
- FCO'S Priorities and Possible Missions
- Develop Housing Management Plan
- Assess Team Staffing
- Mission Assignment Coord. - MA and Taskers
- Coordinate with FEMA IA Housing Coordinator
- Coordinate with FEMA Environmental

TEMPORARY HOUSING MANAGEMENT PLAN AGREEMENT

BETWEEN

THE STATE OF MISSOURI

THE FEDERAL EMERENCY MANAGEMENT AGENCY (FEMA)

THE GENERAL SERVICES ADMINISTRATION (GSA)

THE U.S. ARMY CORPS OF ENGINEERS (USACE)

THE COUNTY OF PEMISCOT, MISSOURI

THE CITY OF CARUTHERSVILLE, MISSOURI

1. MISSION

Provide temporary housing in the form of travel trailers or mobile homes at individual sites or parks for the victims of tornados in Caruthersville, MO and Pemiscot County, MO. This will include service order contracts for haul and installation of units at individual or group sites and/or design and construction of mobile home parks including utilities, pads, and roadways, and hauling and installing the mobile homes on the pads. The work will be done in accordance with local state laws and regulations, and federal environmental laws.

- **7. RESPONSIBIITIES**
- **a. USACE**
- i. Provide project and construction management
- ii. Secure contractor(s) to execute the mission
- iii. Prepare environmental assessment with close FEMA coordination
- iv. Assist with rights of entry and hold harmless agreement for all sites
- v. Coordinate with City and County
- vi. Coordinate with all permit agencies
- vii. Coordinate mobile home criteria with FEMA

- **b. GSA**
- i. Coordinate leases for Staging Areas and Group Sites.

- **c. County/City**
- i. Expedite permits and provide rights of way for selected properties
- ii. Coordinate addresses for mail service
- iii. Operate and maintain sites for duration of use
- iv. Responsible for coordination of close-out of site

- **d. FEMA**
- i. Coordinate mission with State and County
- ii. Provide funding for mission execution.
- iii. Identify individual sites needing mobile homes or travel trailers
- iv. Transport FEMA owned mobile homes and travel trailers to the Staging Site.
- v. Ensure mobile home and trailers are fully mission capable after arrival at the Staging Site.

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INITIAL BREIFING
FCO, STATE AND CONGRESSWOMEN

Memphis District Commander Col. Charlie Smithers and members of his staff

SENATOR BOND

RECOMMENDATIONS

TEMPORARY HOUSING UNIT ESTIMATES

- HURRICANES – PRE-DEC SME AND AO DEPLOYED PRIOR TO LANDFALL
  - a. Englink Model
  - b. U. S. Census Bureau Website
  - c. State and County EOCs
  - d. FEMA
  - e. AERIAL MAPPING

U.S. Census Bureau

People	Pemiscot County	Missouri
Population, 2004 estimate	19,571	5,754,618
Population, 2000	20,047	5,595,211
Households, 2000	7,855	2,194,594
Persons per household, 2000	2.52	2.48
Median household income, 1999	$21,911	$37,934
Per capita money income, 1999	$12,968	$19,936
Persons below poverty, percent, 1999	30.4%	11.7%

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GOOGLE EARTH

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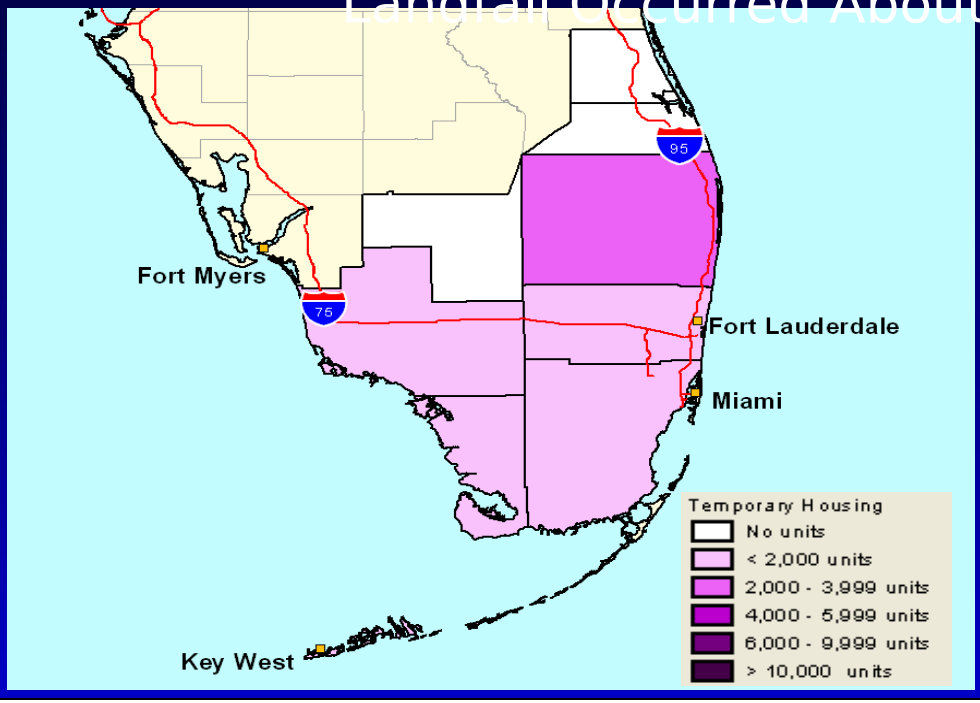
ENGLink INTERACTIVE

Hurricane Wilma Temporary Housing Model Results

Landfall Occurred About **8** Hours Ago

For Official Use Only!



Post Landfall Temporary Housing Model Results

Florida – 2,700

Model results per county on following page

This model is based on a Category 3 storm making landfall south of Naples, FL.

Information provided on this page displays a Category 3 storm making landfall south of Naples, FL. These projections are based on information from the NHC (***1100 EDT 10/24/2005***) forecast. The amount of temporary housing that may be required is based on no housing need in CAT 1 wind area, 2% of housing units requiring temporary replacement in CAT 2 wind areas and 4% of housing units requiring replacements in Cat 3.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers **Hurricane Wilma Housing Model**

Generated By:
LaDue and Siemsen, LR 1300 EDT 10/24/2005

Sources:
HURREVAC
LRL-DEBRIS

US Army Corps of Engineers

ENGLink INTERACTIVE

Hurricane Wilma Temporary Housing Model Results

For Official Use Only!

Landfall Occurred About **8** Hours Ago

State	County	House Units per County
Florida		
	Broward	100
	Collier	100
	Dade	100
	Hendry	100
	Martin	100
	Monroe	100
	Palm Beach	2,000
	St Lucie	100
TOTAL		2,700

THIS IS AN EXPERIMENTAL MODEL !! THE VALUES ARE PRELIMINARY AND SHOULD BE CONSIDERED A GUIDE BUT NOT AN ABSOLUTE VALUE !!

The amount of temporary housing that may be required is based on no housing need in CAT 1 wind areas, 2% of housing units requiring replacement in CAT 2 wind areas and 4% of housing units requiring replacement in CAT 3 wind areas.

Details about this model may be obtained at https://englink.usace.army.mil or contact ENGLink at 1-877-936-4546

US Army Corps of Engineers

Hurricane Wilma Housing Model

Generated By:
LaDue and Siemsen, LRL 1300 EDT 10/24/2005

Sources:
HURREVAC
LRL-DEBRIS

Missouri Tornados 2006

Temporary Housing Mission Tasks

(1) Haul, and install mobile homes, travel trailers or other readily fabricated dwellings,
(2) Perform environmental assessment,
(3) Perform staging area operations (Logistics and/or real estate support for Rights of Entry and leasing authorization may be necessary).

(4) Provide site assessments, site development, site design, and construction oversight, including installation of utilities, for mobile home group sites and staging sites.

PRIORITIES

1)Mobile homes on private site (the homeowners property)

2) Travel trailers on private site (the homeowner's property)

3) Group sites with combination of travel trailers & mobile homes.

TEMPORARY HOUSING DESIGN CONSIDERATIONS

- **Assumptions:** trailer size of 14” x 60
- **Pad Requirements**. 40’ X 80’ = 3,200 sf.
- **NEPA**
- **Size of Lots.** For general planning use the guideline of 6 to 8 housing units per acre.
- **Fire Separation Distance** : 26’
- **Utilities**. Coordinated with the local utility companies.

All the local players should be identified at the **Initial Project Team Meeting** and the local regulatory officials during the design process.

Water
Wastewater
Electrical
Telephone
Cable TV
Fire protection
Solid waste

5 Acres
Potential Staging Area - Zone C
Warehouse Building Lot - Zone C
4 Acres
Levee Road Site - Zone B
15 Acres
11 Acres
City Park Site - Zone B/C
Eastwood Ave
E 17TH St
Maple St
Oak St
Adams Ave
E 16TH St
© 2006 Navteq
Google
Pointer 36°10'59.66" N 89°38'57.18" W
Streaming 100%
Eye alt 3891 ft

GROUP SITE 15 AC CARTHURSVILLE

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CASINO SITE STAGING AREA CARUTHERSVILLE

ADDITIONAL STAGING SITES

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AIRPORT STAGING AREA CARUTHERSVILLE

ADDITIONAL HOUSING SITE

TRAILER SITE CONSTRUCTED IN WV

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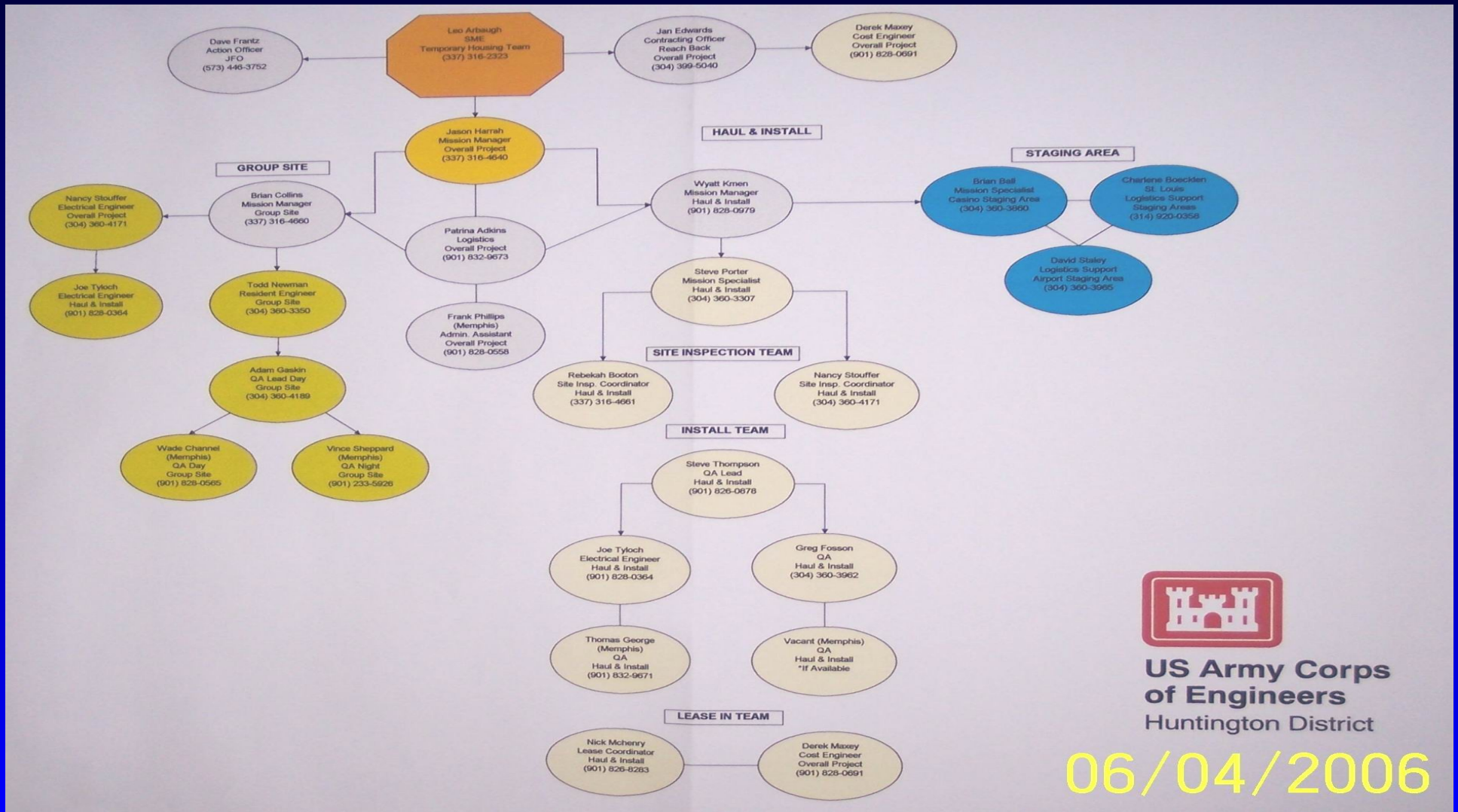
TRAILER SITE CONSTRUCTED IN WV

TRAILER SITE CONSTRUCTED IN WV

Housing Mission Contracting Capabilities

- LRH will issue 3 Contracts (Staging Area, Haul & Install, Group Site)
- Two IDIQ LRH Contractors have $29 million combined capacity.
- Staging Area contract is being negotiated.
- Haul & Install Operation and Group Site will be awarded in the next 2 days.
- Contractor ETA to being work on staging area (4/15/2006)

ORG CHART BASED ON MA



DEPLOYMENT TIMELINE

- PRT ADMIN CELL (PRIOR TO OR SHORTLY AFTER DEC.)
- PRT DESIGN CELL (3 TO 5 DAYS AFTER DEPLOYMENT OF ADMIN CELL)
- PRT CONSTRUCTION CELL (5 TO 10 DAYS AFTER DESIGN CELL)

FEMA COORDINATION

10/15/2004

QUESTIONS